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A
LETTER
TO
SIR GILBERT BLANE, BART.
PHYSICIAN TO THE KING,
M.D. M.D. M.D.
FROM
SIR ANTHONY CARLISLE,
SURGEON EXTRAORDINARY TO HIS MAJESTY,
M.D. M.D. M.D.
ON
BLISTERS,
RUBIFACIENTS, AND ESCHAROTICS;
GIVING
AN ACCOUNT OF THE EMPLOYMENT OF
AN INSTRUMENT
ADAPTED TO TRANSMIT A DEFINED DEGREE OF HEAT,
TO EFFECT THOSE SEVERAL PURPOSES.

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THE UNIVERSITY
OF BRISTOL

TO

SIR GILBERT BLANE, BART.

PHYSICIAN TO THE KING,

F. R. S. OF LONDON, EDINBURGH, GOTTINGEN,

ᄁc. ᄁc. ᄁc. ᄁc. ᄁc.

DEAR SIR,

THERE are but few instances in the modern history of the Healing Art, in which Learning or Science have afforded any direct improvements ;—your own Works are, however, exceptions, and, on that account, I address this publication to you.

Discoveries and inventions are commonly no more than the first practical applications of things just becoming to be known, or new combinations which are suited to human purposes ;—and it must be confessed that, in most cases, such adaptations would soon have occurred to

many persons, especially where a liberal interchange of knowledge prevails.

On this occasion several casual incidents have led to the trial of a defined degree of heat, as a means of blistering, and also for acting as rubifacients, and counter-irritants.

The effectiveness of Heat as a BLISTERER is sufficiently notorious, from the various accidents of scalds and burns, but the means for directing an exact temperature to parts of the human body with the requisite precision, has not been hitherto devised;—and, since many strong objections occur in the employment of Medicated Blisters, a method to obviate them is now proposed.

The natural cause of blistering appears to be, an inflammation of the true skin, inducing a flow of serum under the scarf-skin, which detaches their connections; and whether that sort of inflammation be excited by acrimonious substances, such as cantharides, mustard, &c., the results are similar to a scald from boiling water.

If curiosity should ask the reason of these occurrences, the answer is, that the scarf-skin is an insensible film, spread over the sensible exterior of the living body, to protect it against unceasing and unavailing sensations; but, when certain noxious stimulants penetrate this boundary, other provisions are ready; the rapid interposition of an effused fluid between the sensible part and the offending substance, immediately places them at a distance;—or, when the hurtful object acts slowly, then a defence is gradually made by additional layers of the cuticle. The blistered hands of the unaccustomed rower, and the callous palms of the veteran boatman, exemplify these two natural modes of protection.

In the employment of cantharides for blistering, a strangury sometimes follows, which may prove to be more troublesome than the disease for which the remedy had been ordered.

In all inflammatory or irritable affections of the urinary organs, cantharides are ob-

viously unfit; and, it is probable, that their acrimony is vexatious to other parts of the animal body, beside the organs which they specially annoy.

The action of MEDICATED BLISTERS is so slow, that in acute diseases many hours, often of critical importance, are lost.

Plasters or cataplasms are also liable to be wholly removed or to be shifted from their appointed localities by restless patients and by children, and in extreme debility they entirely fail to act.

The influence of blisters or rubifacients is of two kinds:—One of them operates by causing painful sensations, and in that way the sensorial powers are reduced, or the attention of the mind is diverted from an irksome disease; there being an unquestionable connexion between the nervous and the vascular systems; and in several maladies it is difficult to control the one without at the same time affecting the other:—Even in the animal creation, as I am informed by Mr. Professor COLEMAN of the Veterinary

College, inflammatory affections of the Horse's foot are decidedly abated by dividing the nerves which lead to the afflicted part.

The second mode of remedial influence from BLISTERS is, their direct action upon the capillary blood vessels, which are the immediate seats of inflammations ; — and, whether the actual state of inflammation be a dilatation, or an obstruction of the capillaries, or both of these results, the emptying of those surcharged vessels by collateral drains, or the attraction of the vascular actions to another part, may equally relieve the disease.

All the histories and evidences of local inflammations prove the frequency of their shifting from place to place, technically called "*Metastasis*," and that the shiftings or the temporary suspension of local inflammations are often influenced by the mind. A remarkable instance of mental vascular effusion occurs in blushing.

The temporary pain of blisters seems to exhaust the wakeful powers of the mind, and

thus to induce sleep; and the same effect follows extensive scalds,—sleep being the rest of the brain from it's labours, and the appointed time for the replenishment of it's vital powers. Hence by a happy constitution of our nature we can only endure a limited extent of bodily pain, without either the extinction of life, or such a reduction of consciousness, that the degree of suffering becomes manifestly diminished.

Blisters and rubifacients are therefore potent means of revulsion in disorders of the sanguineous system, in local errors of the nerves, and in some vitiated states of the sensorium; and the more simple the mode of blistering, the more unmixed will be the effect.

Pain is the signal of distress, conveyed by the nerves, the messengers of the mind, to the seat of consciousness; and the welfare of our bodies would be every moment insecure, but for it's ready warnings. The attention of the mind can only be occupied by one sensation at the same moment, and the weaker impressions give way to those of more intensity;—hence

an acute pain suppresses feelings of less degree. The nerves themselves have their conducting powers suspended by strong sensations; for impressions of feeling take precedence according to their strength, and the direction of voluntary power to the muscles is incompatible with a counter current of sensation.

In this way the farrier twists the upper lip of a horse with a cord to prevent his kicking; and the dog-fighter squeezes his dog's foot violently, or pinches his tail, to make him quit his bite.

During the torture of flogging, men violently exert the muscles of the jaws, or scream, to occupy their nervous energies, and thus to divert the mind from one intolerable agony.

I have presented these suggestions to the few scientific men who follow the Medical Profession, with a full conviction, that they are anxious to co-operate in the advancement of the rationale of the Healing Art, and that the modes of operation and the uses of **BLISTERS** are now open to scientific inquiries.

In acute diseases, whether inflammatory or spasmodic, the suddenness and the pungency of the heat blisterer promise many advantages, —while in chronic cases, the facility of repeating the operation will be often preferable to the tediousness of frequent blistering plasters, or to the more doubtful efficacy of ulcerous sores which are made by cauteries.

The Healing Art can only be regarded as honestly and safely established, where it's practice is founded on the clear inferences of causes and effects,—and such consequences are best understood in the Physical Sciences. The rationale of blisters, rubifacients, and escharotics involves some of the mysterious actions of life; but there is no difficulty in viewing the operations of a blistering temperature as a physical or chymical agent in the first instance, and subsequently, as an excitant or stimulant to the nervous and vascular parts of the living body. The latter effects are complicated, because they embrace and act upon local fluids in rapid circulation, and stir up a sensorial

influence, which flashes from the place of impression to the seat of consciousness, there producing passions which affect the whole frame;—or it may be reflected back by the moral agency of the mind.

I should have felt degraded in my own estimation, if I had not first been fully assured that the method of blistering, which I now propose, is free from cruelty, and, under common cautions, not liable to so many evil consequences as the ordinary methods. The action of a Metallic substance, heated in boiling water, was first tried upon my own arm,—and although the instant pain was severe, the sum of distress was far below that which is occasioned by a blister of Cantharides.

I have since employed the BLISTERER upon many patients, both women and men, selecting those who had lately been blistered with the Cantharides plaster; and they affirm, that the momentary endurance of the instrument is preferable to the former method, and, where a repetition of blistering has since been required, those patients ask for the quick process.

As an agent in the Healing Art, I venture to submit, and to prefer, this blistering or rubifacient instrument, since it gives the practitioner an option for either process, and the effect is immediate; whereas the burning with *moxa* is limited to be an escharotic, and it's tediousness and severity extend through many minutes. As to the indefinitely heated cauterizing iron, I hope and trust that the enlightened humanity of English Surgeons will be sufficient to restrain it's employment upon human beings.

In recommending this novelty, I do not assume that it will supersede long established custom, or that it will be even generally adopted at once; but in country practice, the portableness of the instrument, the facility with which it may always be used, and it's immediate effects, must be obvious whenever such ministration is suddenly demanded in acute diseases.

I have already employed the Blisterer upon the arms, over the hip joints, on the loins, on

the sides of the chest, and on the surface of the belly, with unvarying success.

It appears to me, that sudden and acute derivations from the sensorial or nervous powers are well adapted to relieve spasms; perhaps, even those of tetanus, or hydrophobia; nervous and muscular irritations, such as those which occasion dangerous vomiting or hypercatharsis, and all the local attacks of rheumatism or gout. I am at this time acquainted with a resolute Gentleman, who is liable to fits of the gout in his limbs, and who, preferring to be his own doctor, always applies a blister upon the assailed part, and, as he asserts, with immediate curative effect. This statement agrees with the reported efficacy of burning with *moxa*; but I consider the application of leeches is preferably indicated where the surface of the skin is inflamed, or where the diseased action is within the contact of a strong stimulant. I quite accord, Sir, with your sagacious remark, “ that blisters are more efficacious in affection of the brain, when applied at a distance

from the skull;”—and Baron LARREY has personally informed me, that effects, resembling those of the stroke of the sun, have followed the cauterizing with *moxa* upon the scalp.

Although the process for blistering, now to be described, has already extensively engaged my attention, and has been preferred to less manageable and less precise modes of applying heat, I am still far from regarding the operation as perfect. Further experience will doubtless suggest many convenient manipulations; and the exact degrees of heat, its required contacts and duration, will become gradually better known. Under that circumspect conduct which behoves all medical practitioners, I hope the BLISTERING INSTRUMENT will prove to be an important addition to the Healing Art.*

It is likely that the timidity of some patients, and the obstinacy of prejudiced practitioners

* The Instrument has been made under my direction, and is sold by Messrs. STODART, No. 401, Strand, London.

will, for a time, obstruct the employment of this agent ; but in many violent and acute maladies, the cries of the afflicted, and the alarm of friends, will command the most speedy ministrations. In all cases where the patient is competent, and the urgency is not imperative, there should be a choice offered between this sudden, though severe application, and the lengthened suffering and delayed relief to be expected from a common blister ; yet it must be the paramount duty of the medical adviser to urge that, which is most proper.

DIRECTIONS AND OBSERVATIONS.

The head of the blistering instrument is to be plunged into boiling water, and so to remain for five minutes ; it is then to be taken out, and rubbed dry. The part intended to be blistered should be covered with a piece of silk, and the designated extent of surface wetted with warm water from a sponge or napkin. The size of the intended blister may be defined by the coloured squares marked on the

silk. There is no need for haste in applying the instrument, because it will retain a sufficient blistering temperature for ten minutes, if suspended in the ordinary atmosphere of a dwelling room. The wetted silk being drawn smoothly over the surface of the skin, and in close contact with it, the face of the heated blister is to be gently pressed against the part fixed upon, with a force rather more than the weight of the head of the instrument. If the blisterer has not been longer than five minutes out of the boiling water, the vesicatory action will be excited in about three seconds, which may be determined by the operator's counting one, two, three, aloud, at the intervals of a second each. This counting aloud diverts the attention of the patient, and points out the speedy termination of his suffering. It appears from my experience, that the transmission of a scalding heat to the human skin by this agent, requires close contacts between the face of the instrument and the silk; and again, between the silk and the skin, which may be assured by

varying the direction of the pressure, beginning first with the face of the instrument and then rolling it edgeways and endways. A firm contact of two seconds being allowed for the centre, and the remaining second for the turnings.

By this process a blister of the size of the face of the instrument will be produced, but the inflammation which is to effuse the serum under the cuticle is not immediate.

The first effect is a corrugation of the skin, causing paleness; and when the red blood again returns, it presents an inflamed redness, which gradually proceeds to discharge serum, and to detach the cuticle:—this event occurs variously, and depends greatly on the due adaptation of the degree of heat and on the duration of close contact. The part which is operated upon, should be dried, after removing the wetted silk, and then covered with soft dry linen.

Blisters produced in this manner, are not so liable to painful sensations afterwards, as those created by cantharides or mustard seed,

—but they should be dressed with KIRKLAND's *Neutral Cerate*, in preference to soft greasy ointments.

I have generally found that an escharotic effect follows the application of the instrument, if immediately applied at it's highest temperature, and if it be thus continued on the part beyond five seconds; but this occurrence is much more moderate in it's effects than the *moxa*.

When the heated Blisterer has been exposed to the air for ten minutes, it requires to be held two seconds longer in contact; but the bulk of the metallic head retains a blistering temperature for nearly fifteen minutes, and the rapidity with which the heat is transmitted to the skin gives it more potency than water of the same temperature, or any slower conducting substance.

When the instrument is required to produce Rubifacient effects, the part should be covered with *dry* silk, and the instrument moved slowly over the surface in the manner of a laundress

when ironing, until a sufficient degree of pain and redness arise.

When required to make an Eschar, the instrument, to 212 degrees, must be firmly pressed upon the part during the counting of ten seconds ; and the size of the eschar may be defined by applying the corner, the end-edge, or the side-edge, or the whole face of the metallic head. Strong blisters or escharotics ought never to be applied to the palms of the hands or soles of the feet, since, if subcutaneous inflammation follows, it produces adhesions among the ligamentous and tendinous parts ; neither should these remedies be used upon the back of the hand, the upper part of the foot, the wrists, or the ancles, because of their exposed bones, tendons, and ligaments.

'The statement of Baron LARREY, as to the occasional bad consequences of heat, when applied directly to the skull, should warn us against employing any high temperature so near to the brain. I think these applications are also improper where there is erysipelas, or where a tendency to gangrene is suspected.

In proportion to the progress of scientific views and methods, among the members of the Healing Faculty, there will be greater precision and efficacy in their practice, and the enlightened portion of mankind will regard and treat them accordingly.

Although the defined heat of boiling water must effectually prevent any consequences beyond that temperature in using the Metallic Blisterer, yet, I think, all prudent persons will agree with me, in wishing the application of it to be restricted to medical men.

To those of my own Branch of the Profession I confidently entrust this active agent; and they will perhaps not be offended, if I advise them to regard it as a Surgical operation, for which they should be remunerated as Gentlemen, by a moderate fee; instead of following the unbecoming custom of making it an item, as in a tradesman's bill. Perhaps the rural practitioner will find the instrument to be an apt pocket companion.

The expression of my public thanks is due to my liberal colleague and friend, Dr. HAMILTON

RAE, for his co-operation in the first trials of the Heat Blisterer, and for his prompt admission of it's utility.

Accept, Dear Sir, my best wishes for your personal welfare, and also the offering of this humble attempt to promote those great purposes of Humanity, in which your superior talents have been so honourably engaged.

ANTHONY CARLISLE.

Langham Place, Oct. 29th, 1826.

*For "rubifaciens," read rubefaciens.
Page 12, line 6, for "frequent," read continued.
Page 18, line 8, for "blister," read Blisterer.
Page 21, line 4, after "instrument," insert heated.
Page 23, line 1, for RAE, read ROE.*





